

Amendments to the Claims

This listing of claims replaces all prior versions, and listings, of claims in the application.

Listing of claims:

1. (Cancelled)
2. (Currently amended) A system as set forth in claim 21, wherein said server is configured to conduct a search of the World Wide Web, identify documents that include new answer S-A-O's each comprising query elements in the problem statement, store links to such documents, and add such new answer S-A-O's to the knowledge base.
3. (Currently amended) A system ~~as set forth in claim 2,~~ enabling a user to ask a question (query) and for providing the user with one or more answers or in the form of solutions to such question, the system comprising:
 - a knowledge base comprising a set of answers having the form S-A-O (subject-action-object), and further comprising links to documents corresponding to the set of answers;
 - a problem statement generator configured to receive a natural language query from a user apparatus and to automatically generate a problem statement as a query in the form A-O, S-A, S-X-O or S, where S, A and O are query elements in the natural language query, where X indicates absence of a query element;
 - a server coupled to the knowledge base, the server configured to search the knowledge base using the problem statement to find at least one S-A-O answer, wherein the A and O, or S and A, or S and O or S query elements in the problem statement are also in the at least one S-A-O answer, wherein the at least one S-A-O answer includes a statement extracted from a document that provides a solution solicited by the natural language question; and
 - a communication device configured to transmit the at least one answer S-A-O and associated active document links to the user apparatus.

wherein said server is configured to conduct a search of the World Wide Web, identify documents that include new answer S-A-O's each comprising query elements in the problem statement, store links to such documents, and add such new answer S-A-O's to the knowledge base, and

wherein said server is also configured to conduct said search of the World Wide Web automatically in response to the server determining that no answer S-A-Os exist in the knowledge base comprising the query elements in the problem statement.

4. (Currently amended) A system ~~as set forth in claim 2,~~ enabling a user to ask a question (query) and for providing the user with one or more answers or in the form of solutions to such question, the system comprising:

a knowledge base comprising a set of answers having the form S-A-O (subject-action-object), and further comprising links to documents corresponding to the set of answers;

a problem statement generator configured to receive a natural language query from a user apparatus and to automatically generate a problem statement as a query in the form A-O, S-A, S-X-O or S, where S, A and O are query elements in the natural language query, where X indicates absence of a query element;

a server coupled to the knowledge base, the server configured to search the knowledge base using the problem statement to find at least one S-A-O answer, wherein the A and O, or S and A, or S and O or S query elements in the problem statement are also in the at least one S-A-O answer, wherein the at least one S-A-O answer includes a statement extracted from a document that provides a solution solicited by the natural language question; and

a communication device configured to transmit the at least one answer S-A-O and associated active document links to the user apparatus,

wherein said server is configured to conduct a search of the World Wide Web, identify documents that include new answer S-A-O's each comprising query elements in the problem statement, store links to such documents, and add such new answer S-A-O's to the knowledge base, and

wherein said server is programmed to prompt the user for a command to initiate the search of the World Wide Web.

5. (Currently amended) A system as set forth in claim 21, wherein the user apparatus converts human voice signals into said problem statement.

6. (Currently amended) A system as set forth in claim 21, wherein the user apparatus converts the at least one answer S-A-O into audio signals.

7. (Currently amended) A system as set forth in claim 21, wherein said user apparatus includes voice-to-text and text-to-voice recognition capability and a client software module including the problem statement generator.

8. (Currently amended) A system as set forth in claim 21, wherein said user apparatus includes a user digital computer for generating said problem statement and receiving said at least one answer S-A-O.

9. (Original) A system as set forth in claim 8, wherein said user apparatus further includes at least one user input device that includes a human voice to signal converter or a keyboard.

10. (Original) A system as set forth in claim 8, wherein said user apparatus further includes at least one user input device that includes a signal to audio converter or a visual display monitor.

11. (Currently amended) A system as set forth in claim 21, wherein each of the at least one answer S-A-Os is represented in a sentence format.

12. (Cancelled)

13. (Currently amended) A method as set forth in claim ~~[[12]]~~ 22, further comprising searching the World Wide Web, identifying documents that include new answer S-A-O's each comprising query elements in the problem statement, storing links to such documents, and adding such new answer S-A-O's to the knowledge base.

14. (Currently amended) ~~A method as set forth in claim 13,~~ In a digital computing system, a method enabling a user to input a question (query) and providing the user with one or more answers or solutions to such query, the method comprising:

receiving a natural language user query that includes one or more query elements in the form of A-O, S-A, S-X-O, or S, where X indicates absence of a query element;

providing a knowledge base of semantically and automatically processed information including a set of answers in the form of S-A-O's (subject-action-object), and further comprising active links to documents corresponding to the set of answers;

automatically generating a problem statement in the form A-O, S-A, S-X-O or S from the natural language query, where S, A and O are query elements in the natural language query;

using the problem statement, identifying in the knowledge base at least one answer S-A-O, wherein the A and O, or S and A, or S and O, or S query elements in the problem statement are also in the at least one S-A-O answer;

transmitting signals representative of the at least one answer S-A-O to the user apparatus; and

searching the World Wide Web, identifying documents that include new answer S-A-O's each comprising query elements in the problem statement, storing links to such documents, and adding such new answer S-A-O's to the knowledge base, including initiating said searching automatically in response to determining that no answer S-A-Os exist in the knowledge base that include the query elements in the problem statement.

15. (Currently amended) ~~A method as set forth in claim 13, further~~ In a digital computing system, a method enabling a user to input a question (query) and providing the user with one or more answers or solutions to such query, the method comprising:

receiving a natural language user query that includes one or more query elements in the form of A-O, S-A, S-X-O, or S, where X indicates absence of a query element;

providing a knowledge base of semantically and automatically processed information including a set of answers in the form of S-A-O's (subject-action-object), and further comprising active links to documents corresponding to the set of answers;

automatically generating a problem statement in the form A-O, S-A, S-X-O or S from the natural language query, where S, A and O are query elements in the natural language query;

using the problem statement, identifying in the knowledge base at least one answer S-A-O, wherein the A and O, or S and A, or S and O, or S query elements in the problem statement are also in the at least one S-A-O answer;

transmitting signals representative of the at least one answer S-A-O to the user apparatus; and

searching the World Wide Web, identifying documents that include new answer S-A-O's each comprising query elements in the problem statement, storing links to such documents, and adding such new answer S-A-O's to the knowledge base, including prompting the user for a command to initiate the searching of the World Wide Web.

16. (Currently amended) A method as set forth in claim [[12]] 22, further comprising converting human voice signals into said problem statement.

17. (Currently amended) A method as set forth in claim [[12]] 22, further comprising converting the at least one answer S-A-O into audio signals or visual display.

18. (Currently amended) A method as set forth in claim [[12]] 22, wherein generating the problem statement includes converting voice-to-text.

19. (Previously presented) A method as set forth in claim 17, wherein generating the audio signals or visual display includes converting text-to-audio or voice-to-text.

20. (Previously presented) A method of providing one or more solutions in response to a user query, the method comprising:

providing a knowledge base of semantically and automatically processed information including a set of answers in an the form of S-A-O[['s]] (subject-action-object) format, and further comprising active links to documents corresponding to the set of answers;

processing a natural language user query at a user device, including generating a problem statement in the form A-O, S-A, S-X-O or S from the natural language user query, where S, A and O are query elements in the natural language query and X indicates absence of a query element, converting the problem statement into a URL query, and sending the URL query to a semantic server having access to the knowledge base;

generating a non-keyword knowledge base query from the URL query at the semantic server and searching the knowledge base using the semantic elements and semantic relationships from ~~for one or more S-A-O solutions associated with the problem statement~~ to find one or more answer S-A-O, wherein the one or more answer S-A-O includes the A and O, S and A, S and O, or S from the problem statement and an S, A, or O to replace each X in the problem statement, thereby completing the S-A-O format;

and if the one or more answer S-A-O solutions ~~are~~ is found, converting the one or more answer S-A-O solutions into at least one HTML page and sending the at least one HTML page to the user device; and

processing the at least one HTML page at the user device to output the one or more answer S-A-O solutions to the user query.

21. (New) A semantic answering system that returns natural language answers in an S-A-O (subject-action-object) format in response to a natural language question, wherein the S-A-O format represents semantic relationships between the S, A, and O elements, the system comprising:

a problem statement generator that processes the natural language question to extract a problem statement in a format X-A-O, S-A-X, S-X-O, or S-X-X, wherein S, A,

and O are semantic elements in the natural language question, X indicates absence of an S, A, or O;

a knowledge base comprising an answer database including a set of answer S-A-Os and, for each answer S-A-O, a link to a source document;

a semantic server configured to perform a non-keyword query of the knowledge base using the semantic elements and semantic relationships from the problem statement to find at least one answer S-A-O, wherein the at least one answer S-A-O includes the A and O, S and A, S and O, or S from the problem statement and an S, A, or O to replace each X in the problem statement, thereby completing the S-A-O format; and

a communication device configured to output the at least one answer S-A-O to a computer.

22. (New) In a digital computing system, a semantic answering method that returns natural language answers in an S-A-O (subject-action-object) format in response to a natural language question, wherein the S-A-O format represents semantic relationships between the S, A, and O elements, the method comprising:

processing the natural language question to extract a problem statement in a format X-A-O, S-A-X, S-X-O, or S-X-X, wherein S, A, and O are semantic elements in the natural language question, X indicates absence of an S, A, or O;

providing a knowledge base comprising an answer database including a set of answer S-A-Os and, for each answer S-A-O, a link to a source document;

performing a non-keyword query of the knowledge base using the semantic elements and semantic relationships from the problem statement to find at least one answer S-A-O, wherein the at least one answer S-A-O includes the A and O, S and A, S and O, or S from the problem statement and an S, A, or O to replace each X in the problem statement, thereby completing the S-A-O format; and

outputting the at least one answer S-A-O to a computer.